

lindum green roofs

Green roofs are created when living plants are grown on a roof structure. A common feature in Europe, there is an increasing number of green roofs in the United Kingdom.

New construction techniques have created endless opportunities for many different types of green roofs. In particular, technology for the creation of 'extensive' green roofs has been developed, where the plants chosen require minimal maintenance and will flourish in relatively shallow substrate depths which are lightweight and require no specific support.

"One of the most exciting aspects of green roofs is their potential to support life in situations that would otherwise be largely barren and sterile."

Dr Nigel Dunnett, University of Sheffield



Benefits of Green Roofs

Green roofs address many of the key issues associated with climate change: extremes of weather resulting in unpredictable periods of excess rainfall, drought, heat and cold stress. They:

- Absorb rainfall that would normally run straight off hard surfaces and are therefore important to help with storm water attenuation and reducing urban flooding.
- Help to combat the effects of pollution – the green plants absorb noise, trap dust, recycle carbon dioxide, absorb and break down many gaseous pollutants.
- Promote biodiversity and create a natural habitat, encouraging a wide range of insects, birds and butterflies, particularly in areas where the habitat has been 'lost'.
- Reduce the 'urban heat island effect' and the energy costs associated with keeping buildings cool in hot weather.



Working closely with the University of Sheffield's Dr Nigel Dunnett and the Green Roof Centre, Lindum has developed a range of wildflower, sedum and herb mixtures specifically to provide a biodiverse, colourful and drought tolerant vegetation that will flourish in the often extreme or harsh conditions created on an extensive Green Roof.



See www.lindumgreenroofs.co.uk

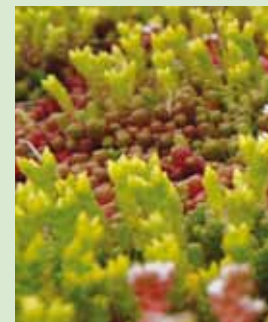
Lindum Green Roof Mats

Sustainably grown in the UK and supplied as a ready-to-roll-out mat to create an instant vegetation layer, there are two main mixtures available:



Lindum Wildflower & Sedum Mat

A mix of wildflowers, sedum and herbs with a prolonged flowering period to provide biodiversity and visual impact. For more information see: Lindum Wildflower & Sedum Mat technical sheet.



Lindum SedumPlus™ Mat

Sixteen colourful varieties for extended interest and colour throughout the flowering period. For more information see: Lindum SedumPlus Mat technical sheet.

Other products available

Lindum Low Maintenance Mat and Lindum Wildflower & Meadow Grass Mat. For further details see www.lindumgreenroofs.co.uk

Why choose a Lindum Green Roof Mat?

- **Grown in the UK** – Products specifically developed for green roofs in the UK.
- **Planting mixtures** – chosen to thrive in extensive green roof situations, where exposed conditions can be harsh.
- **Lightweight** – will grow in an appropriate lightweight substrate of minimum 75mm depth.
- **Biodiversity** – the variety of plant species provides an important habitat for bees, butterflies and insects.
- **Visual impact** – a range of plants with an extended flowering season resulting in a visually pleasing effect.
- **Easy to install** – simply rolls out like a carpet.
- **Easy maintenance** – Lindum's green roof products only require one cut a year in autumn.
- **Drought tolerant** – the plants are chosen to withstand periods of drought. There should be no need for irrigation except in extreme prolonged drought or where aesthetic value in dry periods is important.
- **Rapid delivery** – grown in UK, delivery on site is rapid, meaning plants arrive fresher with a better chance of establishment.

Basic profile of an extensive green roof

Vegetation Layer

All Lindum's green roof vegetation mats are sustainably grown in the UK. Lightweight and easy to install, they are supplied ready to roll out as an instant vegetation layer, with the plants established and growing in a biodegradable felt mat made from recycled British textiles.



Lightweight Substrate

Lindum's Extensive Green Roof Substrate is a blend of 100% recycled crushed brick (2-5mm) and green waste compost (0-10mm). The specially matured and graded recycled green waste compost provides optimal stability and minimal leaching of organic matter and nutrients. The compost is mixed with carefully selected and graded clay aggregate made from recycled UK-sourced clean brick and tile. The substrate has an air-filled porosity greater than 20% v/v to provide good drainage, strong root action and robust healthy growth. Available in 1m³ tote bags, 25 litre heat-sealed bags, or in bulk, Lindum's Extensive Green Roof Substrate provides a high quality green roof growing medium with green provenance – i.e. peat-free derived from 100% recycled UK-sourced materials.

Also available:

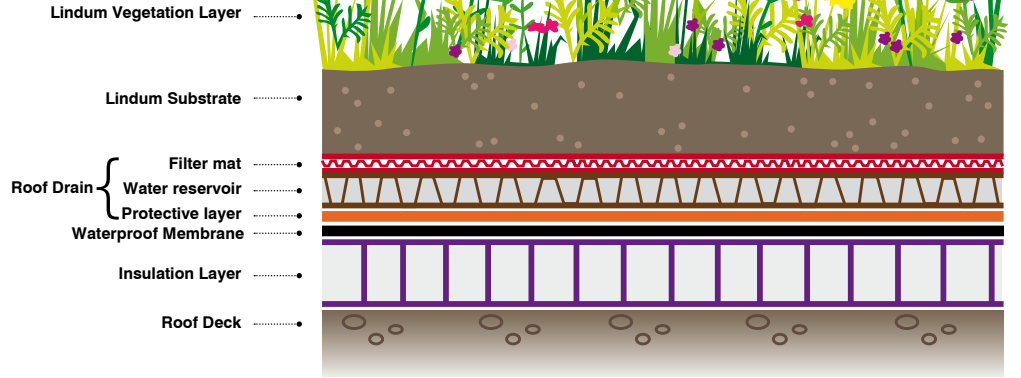
Lindum Brown Roof Substrate: 5-14mm grade brick with 10-25mm compost

Lindum Extra Lightweight Roof Substrate: based on LECA aggregate

Lindum Lawn Roof Substrate: incorporates sterilized reclaimed soil



PROFILE OF A LINDUM GREEN ROOF



Drainage Layer

Lindum's drainage layer product, Roofdrain, is ideal for extensive green roofs as it provides a lightweight drainage layer with a water reservoir to sustain plant growth. Roofdrain attenuates rainfall making it an important element of a SUDS system. Roofdrain consists of a perforated cusped recycled HDPE (high density polyethylene) core with selected geotextiles thermally bonded on each side. The core acts as a water reservoir holding 4.5-5.5 litres per square metre for plants to access in dry periods. The core is perforated to allow excess rainwater to flow into the underside and away to drainage outlets. The upper geotextile acts as a filter, preventing any fine particles from the substrate blocking the drainage layer. The upper geotextile also has a 'zero' breakthrough head to prevent over-saturation of the substrate. The lower geotextile has two key functions: it offers additional protection to the waterproof membrane and acts as an extra moisture retentive layer, holding an additional 1.0 litres per square metre. This further enhances the water holding capacity of the system and slows the rate of run-off. The Roofdrain is manufactured in the UK from up to 95% recycled material making it a sound environmental choice.

Waterproof Membrane

Please contact Lindum for information on waterproofing for both new build and retro-fit green roofs. Lindum can supply details of specialist waterproof membrane suppliers.

Rootbarrier Layer

When using waterproof membranes without a lifetime root penetration guarantee or for retro-fit green roofs where the waterproof material is unknown, an additional root barrier layer should be used. Lindum can supply Rootbarrier:

a nonwoven, 100% polypropylene geotextile, made from continuous heatbonded filaments with an extruded coating. Rootbarrier is impenetrable to roots, strong and flexible, lightweight and easy to install.

Vegetation Barrier & Edging details

A 300-500mm wide layer of 20-40mm washed pebbles or gravel should be applied as a vegetation barrier around the perimeter of the roof and around any roof penetrations (drainage outlets) or roof openings (skylights, windows). Please contact us for information on options for edging details/upstands.

Further information about green roofs is available. In conjunction with the Green Roof Centre, Lindum can provide consultancy for large projects.

Advice on the construction of green roofs is available from many sources including:

www.thegreenroofcentre.co.uk
www.livingroofs.org



Supply

Lindum can provide details of specialist waterproof membrane companies.

Drainage layers and substrates suitable for wildflower green roofs can be supplied by Lindum as a green roof package.

Further information

For more information on vegetation layer options, or Lindum's green roof package, visit our website or contact us to request a technical specification sheet.

Contact

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